Lastly, as in previous years, the eastern vacuity between *Saturn* and the Ring seemed greater than the western, the effect being very marked indeed in 1900.

Note on the Rotation Period of Saturn in 1896 *and* 1897.

By C. Flammarion.

Systematic observations of *Saturn* were started here in 1894, and since that time the work has been carried on to the present year.

In 1894 very few details were seen on the globe, and the double structure of the great dusky belt north of the equatorial zone was scarcely recognised. No spots, dark or white, were seen at that time.

In 1895 the planet was seen much better. The duplicity of the north equatorial belt was well marked, while the narrow band marking the equator was also an obvious feature. On 1895 July 8 a very small dark spot was seen on this band, transiting the central meridian at 9^h G.M.T. This marking was well suited for getting a very accurate determination of the rotation period of the material very near the equator; but it was never seen again.

On 1896 June 27 M. Antoniadi, by stopping down the aperture of the $9\frac{3}{4}$ inch equatorial to $6\frac{1}{2}$ inches, detected a faint dusky spot on the great belt; it was double, having a condensation on each of the two components of the belt. A fainter single spot was seen meantime preceding by a few minutes the double spot. Since that time the dark spots of *Saturn* were easily seen whenever the atmospheric conditions were not very unfavourable.

A thorough discussion of the observations gives the following results:—

Three of the dark spots seen in 1896 could be followed through several transits over the central meridian.

Spot.	First seen.	Last seen.	No. of Rotations.	Rotation Period. h	m	s
1896 A	June 27	July 6	21	10	13	58·0
„ B	„ 27	„ 11	33	10	14	39·6
„ C	„ 29	„ 11	28	10	14	4·1
	Mean period of rotation			10	14	14·

In 1897 the dusky spots were very easy objects, and a great number of them have been seen by myself and other observers.

Four spots could be followed through more than one transit.

Spot.	First seen.	Last seen.	No. of Rotations.	Rotation Period. h	m	s
1897 A	June 13	August 19	157 *	10	14	0·6
„ B	July 10	July 18	19	10	13	23·3
„ C	„ 10	„ 16	14	10	14	15·2
„ D	„ 10	„ 16	14	10	14	36·6
	Mean period of rotation		... ..	10	14	4·

It became increasingly difficult to see the spots, as the southern declination of *Saturn* increased in 1898, 1899, and 1900, and the rarity with which they were seen stood in the way of any serious identification of them. The results, however, for 1896 and 1897 are satisfactory for +18° of kronocentric latitude, and in fair agreement with the work of other observers.

On the Accuracy of Eye-observations of Meteors and the Determination of their Radiant Point. By Bryan Cookson.

The probable existence of stationary radiants for so many meteoric showers and the difficulty of finding a satisfactory physical explanation of them, makes the question of the determination of the radiant of considerable importance. The following is an attempt to obtain a numerical estimate of the accuracy of eye-observations of meteors. So far only *Perseids* have been used for the purpose, this being the shower which afforded the largest number of bright and easily observed meteors ; but it would be interesting to apply the method to other showers with different characteristics, such as those of April and October.

A chart of the celestial sphere on the gnomonic projection was drawn on a scale of about $\frac{1}{10}$-inch to 1° R.A., and $\frac{1}{5}$-inch to 1° Decl., with centre at R.A. 45°, Decl. +57°, which is the assumed position of the *Perseid* radiant on August 10. From the recorded R.A. and Decl. of beginning and end, the paths of the meteors were drawn upon tracing paper placed on the chart, and the equation of the line of the meteor referred to rectangular coordinates, with their origin at R.A. 45°, Decl. +57, was found graphically by an easy and rapid method in the form

$$x \cos a + y \sin a - p = 0.$$

The radiant is the point such that the sum of the squares of the perpendiculars from it to these lines is a minimum. We have, therefore, to solve by least squares a system of equations of the above form for x and y, which are small corrections to be applied to the approximate radiant.

* The identity of the spots seen on 1897 June 13 and August 19 is somewhat doubtful, as there are no intermediate observations.